Appendix C

ROADLESS EVALUATION

Abstract: An initial Roadless Area inventory was done on the Daniel Boone National Forest as called for in 36 CFR 219.17 using the guidelines established in Forest Service Handbook 1909.12 Chapter 7, Section 7. The three roadless areas identified in the 1985 Forest Plan need no further action. They either are wilderness, or are no longer within the jurisdiction of the Daniel Boone National Forest, or do not qualify as roadless areas. Twelve additional areas were evaluated against the criteria. Only Wolfpen Creek (Area 2) met the minimum criteria for a roadless area. Wolfpen Creek is immediately adjacent to Clifty Wilderness.

RE-EVALUATION OF AREAS IDENTIFIED IN THE 1985 PLAN

Clifty Area

Legislated Wilderness, December 23, 1985, in Kentucky Wilderness Act of 1985, PL 99-197.

Troublesome Area

This area was part of a transfer of jurisdiction to the Corps of Engineers for the development of the Big South Fork National River and Recreational Area. Transferred to jurisdiction of the Department of the Interior, National Park Service, October 1990.

Cave Creek Area

This area does not meet the following criteria for Roadless Areas as specified in FSH 1909, Chapter 7, section 7.11b, Criteria for Roadless Areas in the East:

- 1) The area contains no more than one half-mile of improved road for each 1,000 acres, and the road is under Forest Service jurisdiction.
 - 11.25 miles of improved road in a 4,300 acre area = 2.61 miles/thousand acres.
- 2) The area contains only a few dwellings on private lands and the location of these dwellings and their access needs insulate their effects on the natural conditions of federal lands.
 - 1,250 acres (29 percent) of the area is privately owned with numerous private dwellings and access roads through the area.

This area was originally proposed as an "underground" wilderness to protect the cave system. The 1984 evaluation indicated that the 1964 Wilderness Act and the 1975 Eastern Wilderness Act implied that Congress viewed wilderness as a surface area, available to the general public, and did not contemplate an underground area as wilderness. The acts did recognize geological features, such as the Cave Creek Cave, as a part of wilderness.

In addition, Cave Creek Cave has undergone significant human impact. According to the 1964 Wilderness Act, Sec. 2(c), "A wilderness . . . is hereby recognized as an area where the earth and its community of life are untrammeled by man . . ." The act further defines wilderness to mean an area of undeveloped federal land "retaining its primitive character and influence" and which "generally appears to have been affected primarily by the forces of nature."

Cave Creek Cave is impacted by man in two aspects: 1) there is frequent visitation of the cave system by recreational cavers. Signs of humans use last for a long time in fragile ecosystems of caves; and 2) the seasonal fluctuation of Lake Cumberland, a man-made impoundment, affects the accessibility of portions of the cave, and impacts the cave ecosystem. This fluctuation changes the ecosystem in the cave system frequently.

POSSIBLE ROADLESS AREA SURVEY/EVALUATION

A search was made of the Daniel Boone National Forest for areas to consider as possible Roadless Areas. Twelve areas were delineated for consideration by one of two methods of identification:

- 1) Locating areas identified in the 1991 Recreation Opportunity Spectrum (ROS) inventory as Semi-primitive, Non-motorized and Semi-primitive, Motorized, then expanding these areas to logical borders such as roads or ridge tops.
- 2) A review of the Forest Administrative Maps to locate areas that had few roads shown.
- 3) Once an area was identified, a composite of the topographic maps that covered that area was constructed and the road system shown on the topographic maps was updated and made current as of March 1995, based on input from James Boyd, coordinator of the Forests Transportation Information System.

After delineation, the areas were evaluated based on direction from three sources: FSH 1909, Chapter 7, Section 7.11b -- Criteria for Roadless Areas in the East, effective 8/3/92, Criteria for the Identification of Roadless Area, Information needed for Forest Plan Revision and the Southern Appalachian Assessment, 10/21/94, and the Clarification on Roadless Area Guidelines letter from the Regional Forester, dated March 14, 1995. The results of the evaluation are displayed in Table C - 1.

CONCLUSION

Wolfpen Creek is a roadless area based upon the criteria above. It will be further evaluated for possible recommendation as a wilderness study area.

Table C - 1. A summary of the evaluation done on the twelve areas considered.

Area/Name	Approx Acreage	Miles of Improved Roads	Miles/ M acres	Comments/Improvements
#1 Clay Lick	4,450	3.42	0.77	Does not meet 0.5 mile/M acres road criteria. Impacted by sight and sound of Cave Run Lake, and State Route 801, both heavily used by motorized traffic.
#2 Wolfpen Ck.	2,834	0	0	2 unimproved roads. Influenced by KY 77 on the west and KY 715 on the south. Bounded by Clifty Wilderness on the East. Heavily used segment of STNRT and trail to Indian Stairway.
#3 Chimney Top	3,895	0	0	Impacted by 9 heavily used trails in RRGGA. Impacted by Mountain Parkway on the south, KY 77 on the west, KY 715 on the north and FDR 10 on the east. Koomer Ridge Campground, Greys Arch Picnic Area and Chimney Top Vista are also in the area. Does not meet requirements of FSH 1909.12, Chapter 7, Section 7.11b, #4 & 5.
Expanded Areas 2 & 3	10,670	5.00	0.47	Impacted by numerous popular trails of Red River Gorge NRT, Koomer Ridge Campground, Greys Arch Picnic Area, Sky Bridge Picnic Area, Chimney Top Vista and FDR 10. KY Route 715 goes through the middle of this area. Does not meet requirements in FSH 1909.12, Chapter 7, Section 7.11b, #2,4,5.
#4 RRGGA South	2,180	2.28	1.05	Does not meet 0.5 miles/M acres road criteria. Extensive private developments in and on border, including oil wells. Has proposed Tight Hollow RNA in this area. Does not meet requirements of FSH 1909.12, Chapter 7, Section 7.11b, #2,4,5,8.
#5 Rockbridge Fork	1,280	1.06	0.82	Does not meet 0.5 miles/M acres road criteria. 1.06 miles of County Jurisdiction Road. Impacted by FDR 24, and Mountain Parkway, both heavily used by recreationist. Does not meet requirements of FSH 1909.12, Chapter 7, Section 7.11b, #4,5.
#6 Mill Creek	2,230	8.78	3.90	Does not meet 0.5 miles/M acres road criteria. Does not meet requirements of FSH 1909.12, Chapter 7, Section 7.11b, #2,5.
#7 Indian Ck.	1,435	2.30	1.64	Does not meet 0.5 miles/M acres road criteria. Does not meet requirements of FSH 1909.12, Chapter 7, Section 7.11b, #2,5.
Expanded #7	3,300	7.80	2.36	Does not meet 0.5 miles/M acres road criteria. 1.3 miles of County Road 678. 4-H Camp. Several old coal mine sites in the area. Does not meet requirements of FSH 1909.12, Chapter 7, Section 7.11b, #2,5.
#8 Cowhorn Ck.	2,304	4.90	2.10	Does not meet 0.5 miles/M acres road criteria. 0.20 miles of county road to Davis Cemetary. Does not meet requirements of FSH 1909.12, Chapter 7, Section 7.11b, #2,5.
#9 Foster Mtn.	7,220	8.7	1.2	Does not meet 0.5 miles/M acres road criteria. 8.7 miles of County jurisdiction roads. large number of private inholdings and associated access roads. Oil wells present. Does not meet requirements of FSH 1909.12, Chapter 7, Section 7.11b, #2,5.
#10 Bear Ck.	7,680	15.0	1.9	Does not meet 0.5 miles/M acres road criteria. Does not meet requirements of FSH 1909.12, Chapter 7, Section 7.11b, #2,5.
#11 Leatherwood Creek	4,370	6.90	1.58	Does not meet 0.5 miles/M acres road criteria. Does not meet requirements of FSH 1909.12, Chapter 7, Section 7.11b, #2,5.
#12 Sugar Ck.	9,830	9.5	0.96	Does not meet 0.5 miles/M acres road criteria. Extensive road system to access outstanding/reserved mineral rights. Does not meet requirements of FSH 1909.12, Chapter 7, Section 7.11b, #2,5.

Additional Examination in 1999, found no additional areas that would qualify as roadless areas.

WOLFPEN ROADLESS AREA

OVERVIEW

Size

The Wolfpen area is 2,834 acres in size and includes approximately 75 acres of rugged private land in the southwest corner. The area averages 2.5 miles wide and 2.5 miles long.

Location and Vicinity

This area is located on the Daniel Boone National Forest, Stanton Ranger District in Menifee County Kentucky. The area is located approximately 40 miles east of Interstate 64 and 10 miles north of the Mountain Parkway. Nearby Kentucky communities are: Stanton to the southwest, Frenchburg to the north and Campton to the southeast. Lexington is approximately 60 miles to the west.

Wolfpen is within the Eastern Broadleaf Forest Province of the Northern Cumberland Plateau Section-Central Escarpment Subsection.

The area is part of the Red River Gorge National Natural Landmark and Geological Area (RRGGA), and is bounded on the east by the 12,646 acre Clifty Wilderness.

Access

Wolfpen area can be accessed from two-lane, paved State roads that connect to the Mountain Parkway, which in turn, connects to the Interstate Highway system (I-64 to I-75), approximately 40 miles away. State Road 715 lays along the southern boundary of the area and State road 77 bounds the area on the west

There are two closed, unimproved ridge top roads totaling 2.72 miles lay within this area. One road is used for maintenance of two grassy openings. In addition, 3.4 miles of the Sheltowee Trace National Recreation Trail traverse the southeastern quadrant of this area. This trail is closed to motorized use in this area.

Geography and Topography

The Wolfpen area is very rugged and mountainous. 50 to 80 foot tall sandstone cliffs along the north south trending, narrow, side drainages of the Red River, characterize it throughout. Breathitt and Lee formations are the predominant geological formations in the area.

The Wolfpen Creek drainage is the largest drainage in the area and is located on the western side of the area. The Gladie Creek drainage is located in the eastern part of the area. A broad ridge top system is in the northeast part of the area.

Elevations range from 900 feet to 1300 feet.

Vegetation

This area is in the Northern Cumberland Plateau Section of the Broadleaf Forest Province. Most of the forest is early to mid successional. The lower slopes, and mid to upper slopes with north or east aspects, are dominated by mixed mesophytic forest species composed of various oaks and hickories, yellow-poplar, beech, mixed pines, hemlock, ash and maple. The upper slopes, and slopes with south or west aspects, are mostly dominated by oaks and mixed pines. The trees average between 50 and 100+ years old. Heavy under stories of mountain laurel or rhododendron are commonly found on the slopes and ridge tops, with rhododendron being on the more moist sites.

The White-haired goldenrod is located in scattered sites along the base of some of the cliff lines. This species is found in no other place in the world than the RRGGA.

Current Uses

The area is primarily used for dispersed recreation activities such as hiking, rock climbing and dispersed camping. The ridges from State Road 77 to Wolfpen Creek have numerous rock climbing routes located on the cliff lines that bound these ridges. In addition, there is some illegal ATV use from private land on the ridge system in the northeast part of this area.

Only minor amounts of fishing occur due to the lack of quality perennial streams. Due to the rugged terrain and lack of openings and habitat diversity, little hunting, which is mostly for deer, occurs in the area except on the broad ridge top area in the northeast part of the area where two grassy openings are located.

Because the area has been part of the RRGGA since its establishment, there has been little timber cutting since the mid-1970s. The only other activity that occurs here other than recreation management is the maintenance two grassy openings and a cultivated field which is part of the Gladie Historic site.

A peregrine falcon hacking project was done two years ago on the western side of the area. No falcons are known to have remained in this area, however.

Heritage

The RRGGA is internationally known for its outstanding prehistoric sites. This area contains the highest concentration of rockshelters and rock art in Eastern North America. Fewer than 300 rock art sites have been recorded east of the Mississippi River. Kentucky leads the Eastern United Stated in the number of rock art sites (70) and over half of these sites are in the RRGGA. As part of the RRGGA this area has its share of the abundance of prehistoric sites. For example, a site located in the Wolfpen area is one of the earliest sites known in North America where domesticated plants were shown to be a food source for humans. Unfortunately, over the past decades, many of these prehistoric sites have been destroyed or damaged by vandalism or inadvertent dispersed recreation activities.

Appearance of the Area and its Surroundings

Most of this area was cut over in the late 1800's and early 1900's with a little timber cutting occurring up into 1991 when a 35 MBF salvage sale of some storm damage was done. Up until the late 1890's, there was an old home site in the bottom of Wolfpen Creek drainage. Some remnants of an old home place and orchard are still visible. In the 1950's, a 35-acre regeneration sale was carried out and followed up by some pine planting on the site. In 1962, 31 acres of crop tree release was done for yellow-poplar. In 1983, 35 acres were treated by chainsaw for site prep and in the same year, some white pine was under-planted on 24 acres.

Most of the hardwood and pine stands are between 50 and 100+ years old.

Due to its ruggedness and many cliff lines, there has been relatively little management activity in this area. Two closed, unimproved roads access the area on ridge tops from the north. One of the roads is used to access two grassy openings on the broad ridge tops in the northeast part of the area.

The National Forest system lands to the east, west and south have many of the same forest and terrain characteristics of this area. Clifty Wilderness to the east has been a wilderness area since 1985 and contains many of the same characteristics and activities as are found in the Wolfpen area. To the south, is the main body of the RRGGA. It too is characterized by similar terrain and forest conditions but many more trails and some recreational developments can be found here, such as the Gladie Historic site, Sky Bridge and Chimney Top Rock overlook areas. To the west, across State Road 77, rugged National Forest system lands can be found which is not part of the RRGGA.

Private land bounds Wolfpen area to the north. On the ridge tops portions of these properties there are some small farms with some unimproved roads and some cleared pastureland. None of the cleared land is immediately adjacent to the Wolfpen area.

Key Attractions

The scenic quality of the RRGGA's rugged, undeveloped character and its clifflines, which are known internationally for their rock climbing qualities, make this a very popular area for dispersed recreation activities such as hiking and rock climbing. These recreational activities are somewhat less in the Wolfpen area due to a lack of access into the interior, however there are still opportunities for these activities.

The numerous and very unique heritage sites are internationally known in archeological circles and some of the more important sites in the RRGGA are located in this area. Because of these sites, the RRGGA is being proposed as a National Historic Landmark and as part of this designation, the Wolfpen area will be of more interest to those who desire to protect and enhance heritage resources.

WILDERNESS CAPABILITY

Natural Integrity and Appearance

Naturally evolving ecosystem processes are occurring in most places with minimal human influences. Except for the few, localized management activities previously discussed, and the areas of heavier dispersed use, past signs of most human activities continue to deteriorate to the point where they are not visually apparent to the casual observer.

The recreation opportunity spectrum is currently classified as semi-primitive non-motorized. The visual integrity objective is classified as high.

Opportunity to Experience Wilderness Characteristics

If added to the Clifty Wilderness, the size of the Wilderness would expand from 12,646 to 15,480 acres. The core of lands where solitude and remoteness can be experienced would also expand. The center of this core would primarily be on both sides of the Gladie Creek area.

Once away from the noise of the roads to the south and west, visitors to the Wolfpen area can find a fairly remote, undeveloped and natural experience because the ruggedness of the area helps to minimize outside influences and because this same ruggedness has kept many potential human activities and developments from affecting the area. Outdoor skills would be required to traverse the area. Map and compass orienteering skills and in some cases rock climbing (using non-fixed anchors) or rappelling skills could be employed to access certain challenging areas. Certainly, the rugged terrain and lack of developed trails would provide a challenging outdoor experience requiring a high degree of self reliance for a variety of dispersed recreational activities.

SPECIAL FEATURES

The unique characteristics of this area are previously discussed and are attested to by the fact that it is part of a designated Geological Area and National Natural Landmark. The RRGGA is also going to be proposed as a National Historic Landmark. These classifications are due to the uniqueness of its geology that has produced spectacular clifflines and arches and the importance of its heritage resources. The natural features have produced world class rock climbing opportunities and special habitats that contain species such as the White-haired goldenrod, found no where else in the world than the RRGGA.

Size, Shape, Boundaries and Manageability

As previously described, the size, shape and juxtaposition to the Clifty Wilderness make the wilderness preservation of the Wolfpen area practical. The area is bounded on all sides, except for the north, by National Forest System lands. While many of the surrounding lands are similar in character to this area, the State roads to the south and west provide good lines of delineation but add noise to the area. The boundary here should be offset, similar to the offset used on the Clifty Wilderness, to avoid road maintenance impacts. The private land to the north is sparsely settled and rural. Other than some incursions by individuals from this land, including some ATV use, there should be other adverse impacts to the wilderness character of the area. Deeper incursions would be

limited primarily to the ridge top area in the northeast part of the area because the interior areas are very rough and protected by clifflines. Additional land line establishment and maintenance work would be helpful in better delineating this boundary.

WILDERNESS AVAILABILITY

Recreation and Tourism

As previously described, besides established fixed anchor rock climbing routes, the only recreation development in the area is a portion of the Sheltowee Trace National Recreation Trail in the southeast part of the area. Rock climbing, backpacking and some dispersed camping are the primary recreation activities in the area. If the area were designated as Wilderness the main impact would be the exclusion of new rock climbing routes with fixed anchors.

Wildlife

This area provides habitat for a diversity of wildlife but populations of species that require edge and open areas are few due to the lack of such habitat types. There are no wildlife improvements other than the two grassy openings on the ridge area in the northeast corner of the area. Designation as Wilderness would result in these openings eventually reverting to a forested condition and further impacting species requiring open areas and edge.

Timber, Minerals and Grazing

There are no grazing operations in effect in the area, neither are there any planned.

Because the area is part of the RRGGA, all of the area is unsuitable for timber management. There are no timber activities planned for the area.

Most of the area has outstanding private mineral rights.

Water Availability and Use

This area contains the headwaters of several small streams that feed directly into the Red River Wild and Scenic River. These streams are: Wolfpen Creek, Greasy Branch, Sergeant Branch and Klaber Branch. In addition, the area contains part of the watersheds of Duncan Branch and Gladie Creek. All water coming out of the area is of good quality and expected to remain so if the area is designated as Wilderness.

There are no water storage needs or any existing special use water permit authorizations. Designation as Wilderness should not affect the quantity of water coming from this area.

Heritage Resources

As previously stated this area contains numerous very important heritage resources. Designation should not adversely affect these resources.

Land Uses

There are no special uses, cemeteries or other authorizations in this area. If it were designated as Wilderness no special use authorizations would be approved that did not comply with Wilderness desired conditions.

Management Considerations (Fire, Insects/Disease and Non-Federal Lands)

Present fire control techniques would change little if the area were designated as wilderness. Use of hand lines, already required due to the rugged terrain would remain the dominant fire line control method employed. However, the broad ridge area adjacent to the private land in the northeast part of the area is suitable for mechanical control line construction. Designation as Wilderness could pose additional difficulty in controlling fire in this area, including private land protection. However, cliff lines do help restrict movement of fire except in the most extreme conditions.

This area would be susceptible to a gypsy moth invasion, predicted to occur in 3-13 years. Oak decline could be a causal factor in mortality with a gypsy moth invasion in areas where species composition, physiologic age and poor soil conditions reduce tree vigor. Designation as Wilderness would make control of this, or other insect and disease invasion, difficult and result in a loss of many trees, including many on adjacent private land.

WILDERNESS NEED

The concept of wilderness is multifaceted as envisioned by the authors and framers of the 1964 Wilderness Act. As such, there are a number of factors to consider in assessing the need for additional Wilderness.

Outdoor recreation is one of the benefactors of wilderness and is one of the drivers of Wilderness demand and Wilderness management. According to trend data collected from 1965 to 1994, the trend in recreation visits to National Forest Wilderness has paralleled designations and increased over time (Cordell 1999). In the Southeast and in the Daniel Boone National Forest Market Area, participation rates and trends in Wilderness indicate an increase in visitation to wilderness. Within a half days travel (250 miles) from the three largest cities in Kentucky, Owensboro and Louisville have 16 Wildernesses and Lexington has 35 Wildernesses. Lexington is adjacent to the Daniel Boone National Forest.

In addition to recreation in Wilderness, there is a non-user component that values Wilderness and is important to understand when analyzing roadless areas, allocations and the need for additional wilderness. Studies have shown that the non-visiting general public values the knowledge that natural environments exist and are protected. This motivation can be considered an existence benefit. The current generation also obtains the off-site benefit of knowing that protection today will provide Wilderness to future generations. Existence and bequest motivations are sometimes referred to as nonuse or passive use benefits. Several studies have shown the importance and value people place on these passive use benefits of Wilderness (Cordell 1999). These values are reflected in the National Survey on Recreation and the Environment (USDA Forest Service 2002c) finding that 69.8% of those surveyed agreed or strongly agreed to the question, "How do you feel about designating more federal lands in your state as wilderness?" Over 96 percent agreed or strongly agreed with the

statement, "I enjoy knowing that future generations will be able to visit and experience wilderness areas"

Wilderness is valued for preserving representative natural ecosystems, diversity of landscapes and for research. Currently, the vast majority of the Forest is comprised of the Northern Cumberland Plateau and two subsections (Southwest and Central Escarpment). The Central Escarpment is represented by the 12,646 acre Clifty Wilderness. The 4,791-acre Beaver Creek Wilderness represents the Southwest Escarpment. At the regional/national scale, all of the Forest's designated Wildernesses and Wolfpen inventoried roadless area lie within the Eastern Broadleaf Forest Province. Cordell (1999) calculated the ratio of Wilderness to ecoregion area to determine representation of Wilderness. The Eastern Broadleaf Forest Province contains 0.1% of the National Wilderness Preservation System (NWPS) area and 3.5% of the total land area in the Continental United States area, yielding a ratio of 0.03. To provide a policy perspective on representation of Wilderness within a Province a ratio of Wilderness to the ecoregion area is calculated. A ratio of at least one would be adequate representation. This indicates that this Province is currently underrepresented in the NWPS.

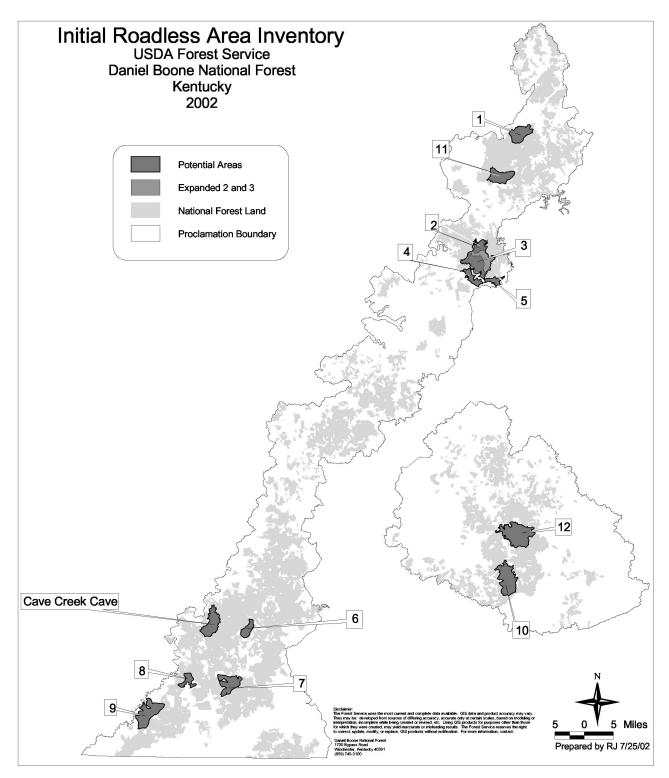


Figure C - 1. Initial Roadless Area Inventory.

The public recommends two Areas for wilderness. One recommendation would add all of the Beaver Creek Wildlife management Area to the Beaver Creek Wilderness and the second recommendation was to create a 40,000-acre wilderness in the Jellico Mountain Area. These two areas were evaluated in 1999 and again with the current geographical information system mapping and inventory in 2002. As shown in Table C - 2, Figure C - 3 and Figure C - 4.

Table C - 2. Summary of the evaluation done on the Beaver Creek and Jellico Mountain recommendations.

Area/Name	Approx NF Acreage	Miles of Improved Roads*	Miles/ M acres	Comments/Improvements
Beaver Creek Wildlife Management Area Outside Wilderness	12,840	46.6	3.6	Does not meet 0.5 mile/M acres road criteria. Impacted by sight and sound of London Dock and Sam Branch recreation sites on the north. State Rounte 90 on the south and southeast. Forest collector route 50 on the northwest and forest collector route 46 on the southeast.
All of Jellico Mountain	19,189	55.1	2.9	Does not meet 0.5 mile/M acres road criteria. State Route 1898 bisects area B. Forest route 492 connects with State Route 1898 and 1470. Forest route 498 and 496 connects with State Route 1470 and 1898. Private Land almost bisects area A and B.
Jellico Mountain Without isolated parcels C, D and E.	18,472	56.3	3.0	Does not meet 0.5 mile/M acres road criteria. State Route 1898 bisects area B. Forest route 492 connects with State Route 1898 and 1470. Forest route 498 and 496 connects with State Route 1470 and 1898. Private Land almost bisects area A and B.
Jellico Mountain Area A.	6,596	21,4	3.2	Does not meet 0.5 mile/M acres road criteria. Forest route 492 connects with State Route 1898 and 1470. Forest route 498 and 496 connects with State Route 1470 and 1898.
Jellico Mountain Area B.	11,876	34.9	2.9	Does not meet 0.5 mile/M acres road criteria. State Route 1898 bisects area B. Forest route 492 connects with State Route 1898 and 1470.

^{*}Only roads within National Forest Boundary are included. Extensive road system services private lands immediately adjacent to National Forest.

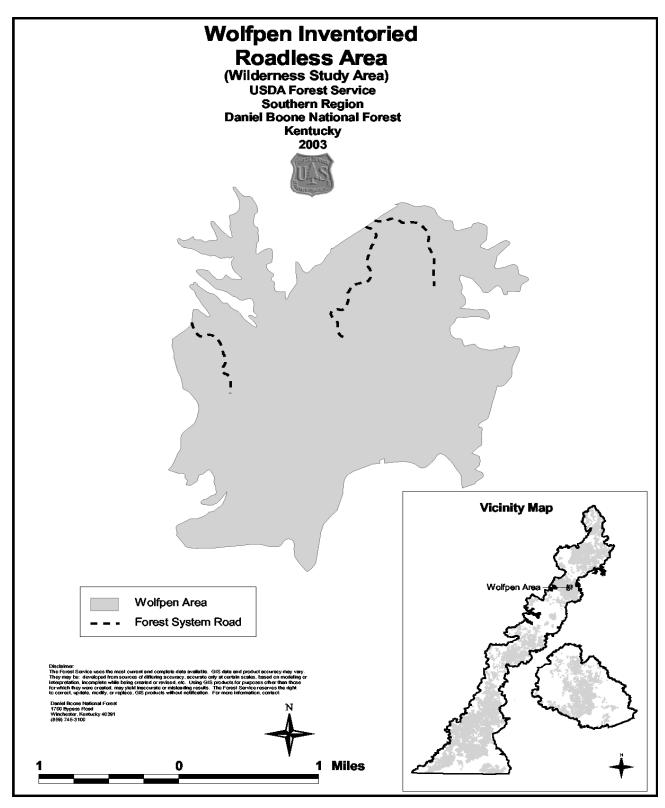


Figure C - 2. Proposed Wolfpen addition to Clifty Wilderness.

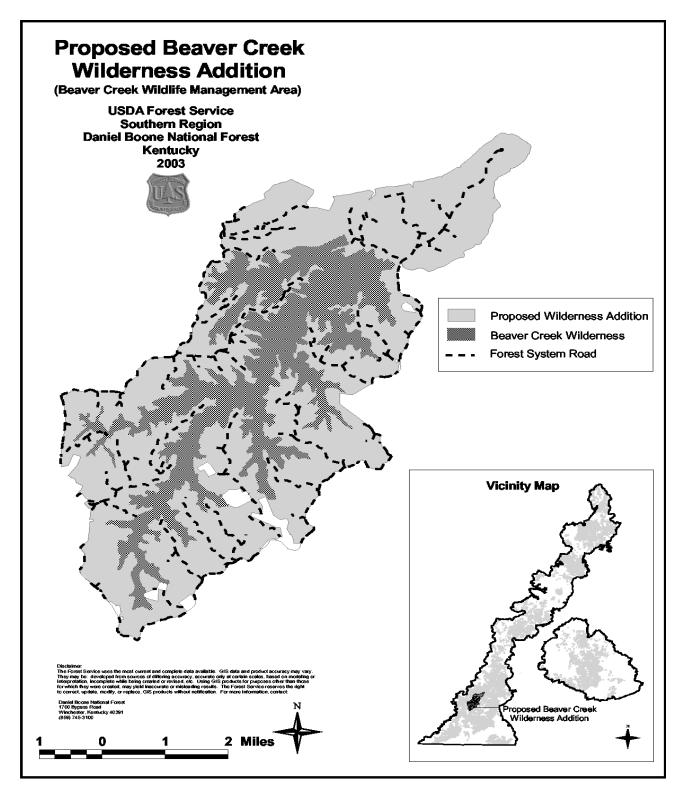


Figure C - 3. Proposed Beavercreek Wilderness Addition.

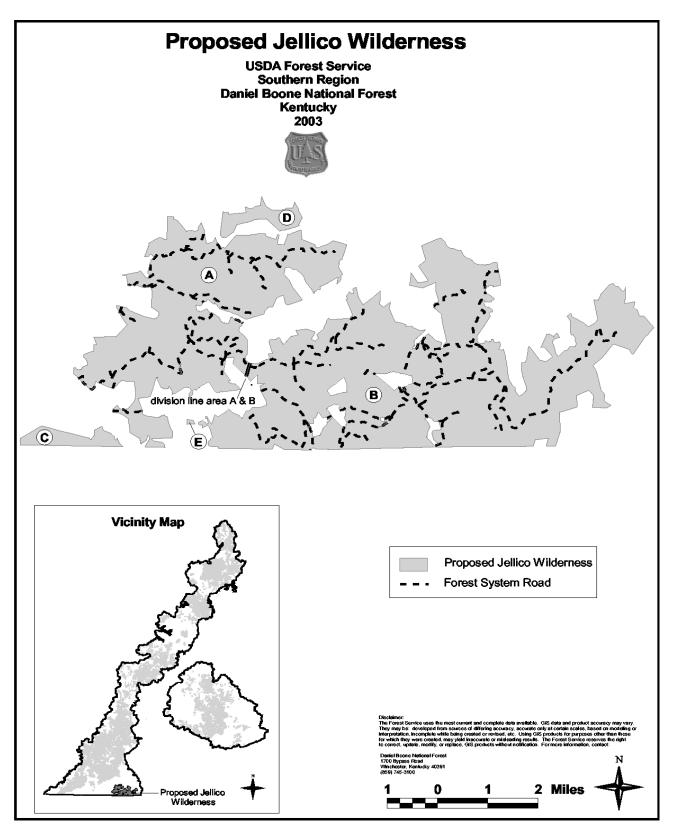


Figure C - 4. Proposed Jellico Wilderness.



Wildflower photography is a popular activity on the Forest